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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/635,205      | 08/09/2000  | Tetsuya Utsui        | P19485              | 5769             |

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RESTON, VA 20191

EXAMINER

CHERRY, EUNCHA P

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2872

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/635,205

Applicant(s)

UTSUI ET AL.

Examiner

EUNCHA P. CHERRY

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- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto.

Matsumoto discloses a polygon mirror (Figs. 1 and 2, 17) comprising a plurality of reflecting surfaces (18 and 21) around its center axis (Q), the reflecting surfaces differing from each other in tilt angle with respect to the center axis (see Fig. 2 and column 3, lines 36-43), the polygon mirror rotating about the center axis (rotation axis Q rotated by motor 3).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Matsumoto.

Swanson et al discloses an endoscope system (Fig. 1E) comprising:

a first waveguide (31);

a second waveguide (41);

an optical coupler, which optically couples the waveguide to each other (21);

a low-coherent light source (10 and column 9, lines 34-40) arranged on a proximal end of either one of the first and second waveguides, the low-coherent light source emitting low-coherent light to be incident on this waveguide;

a polygon mirror (50) having a plurality of reflecting surfaces around its center axis (51, 52 and also see Figs. 13 A and 13B);

a supporting mechanism which supports the polygon mirror and rotates it about the center axis (inherent);

an incident optical member which guides low-coherent light emitted from a distal end of the first waveguide to a reflecting

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surface of the polygon mirror (Fig. 13A optical element prior art to 50);

an emission optical element (Fig. 13A, 510);

a reflecting member (520) which reflects the low-coherent light emitted from a distal end of the second waveguide so that the low-coherent light returns into the second waveguide as reference light (column 23, lines 30-37);

optical path length adjusting mechanism (see Fig. 1E, near 30) which makes a relative change between length of an optical path extending from the optical coupler to an object (25) through the first waveguide (31);

a photodetector arranged on a proximal end of the other of the first and second waveguides (150);

signal processor generating a tomographic image of the object (column 1, lines 10-11);

the optical path length adjusting mechanism moves the reflecting member so as to approach or recede from the distal end of the second waveguide (column 14, lines 1-39);

an illumination optical system (10);

an objective optical system (lenses in 30);

a pick-up device (30); and

display means (110).

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Swanson et al does not disclose the polygon mirror having the reflecting surfaces differing from one another in tilt angle with respect to the center axis.

Matsumoto discloses the polygon mirror having the reflecting surfaces differing from one another in tilt angle with respect to the center axis (see Fig. 2).

It would have been obvious to one of ordinary skill in the art to make reflecting surfaces of the polygon mirror to have different tilt angle with respect to the center axis for the purpose of enhancing the image quality by capturing any light that is incident at angle.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Matsumoto as applied to claims above, and further in view of Fercher et al.

Swanson et al in view of Matsumoto discloses the claimed invention as set forth above except the light source includes a super-luminescent diode. Fercher et al discloses a super-luminescent diode as a light source in an optical coherence tomography system. It would have been obvious to one of ordinary skill in the art to make the light source of Swanson et al in view of Matsumoto to include a super-luminescent for the

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purpose of creating a light having low-coherence because it is a well-known light source for endoscope.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Matsumoto as applied to claims above, and further in view of JP 7-155291.

Swanson et al in view of Matsumoto discloses the claimed invention as set forth above except the light switching mechanism which select either the visible light or the excited light. JP 7-155291 discloses the light switching mechanism which select either the visible light or the excited light. It would have been obvious to one of ordinary skill in the art to add the light switching mechanism which select either the visible light or the excited light for the purpose of using the endoscope for both an endoscope image and a fluorescence image.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

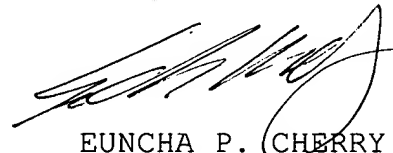
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUNCHA P.

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CHERRY whose telephone number is 703-305-0997. The examiner can normally be reached on M-F 6:30-4:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DREW DUNN can be reached on 703-305-0024. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



EUNCHA P. CHERRY  
Primary Examiner  
Art Unit 2872

July 10, 2003